Alternate forage crops for Southern WA

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PYLE SITE:

Location - **Manypeaks North**

Soil Type - **Sand**

Control - **Ryegrass regrowth, 30ha**

- **360 crossbred lambs**

Variable - **Pallaton Raphno, 45ha**

- **1400 crossbred lambs**

Figure 1: Drone image of the Pyle's Pallaton Raphno crop on December 3rd, 2020.

KEY POINTS

- Pallaton Raphno had a higher nutritional value (NV) than the ryegrass control, with a higher crude protein, digestibility and metabolisable energy.
- Raphno and ryegrass had similar biomass of 3t/ha and 3.8t/ha respectively.
- Excellent weight gain was achieved on the Raphno with 62.5g/head/day more than the ryegrass regrowth.
- The ability of Raphno to grow under grazing pressure and produce leaf material allowed a much higher stocking density with 1400 lambs on 45ha, (31 lambs/ha), compared to 360 lambs on 30 hectares (12 lambs /ha).
- Lamb live-weight gain measured in kg/ha/day was a staggering 5.35kg/ha/day for the Raphno compared to 1.31kg/ha/day achieved on the ryegrass.

BACKGROUND

Last year SCF started a project with funding from Meat & Livestock Australia (MLA) looking at alternative forage crops for southern WA. The aim of the project is to measure the benefit alternate summer forages such as Pallaton Raphno, Sorghum, Millet, and long-season Canola, can contribute to livestock carrying capacity and livestock weight gains. The 'alternate' forage crops were compared to traditional feed sources such as dry pastures and crop stubbles. We had a busy summer collecting data from our MLA PDS sites and so far the results look promising. This article presents the results from Pyle's demonstration site of Pallaton Raphno.

RESULTS

The Pyle's Pallaton Raphno site was sown September 2, and was compared to a ryegrass regrowth paddock from a silage crop cut on the 15 October. Biomass cuts were done and lambs introduced on December 3 with average liveweights of 49kg and 42.5kg for the ryegrass and Raphno, respectively. Plant samples for nutritive value (NV) analysis and soil samples were taken on December 7 from the Raphno paddock and the neighbouring ryegrass regrowth. Interestingly the two paddocks had relatively similar biomass available with 3.01t/ha of ryegrass regrowth and 3.83t/ha of Raphno. However, the ability of Raphno to grow throughout summer and handle a higher grazing pressure allowed a much higher stocking rate of 31 lambs/ha to be carried compared to 12 lambs/ha on the ryegrass over the 30 days. Originally it was planned to remove stock once all Raphno leaf area had been removed however feed ran out in the ryegrass paddock first. NV analysis revealed the Raphno to be of a much higher feed quality, containing a higher digestibility, metabolisable energy nearly double and a crude protein value more than double that of the ryegrass (Table 2).

Figure 2: Left, photo of the Pyle's 30ha Ryegrass control on 7th Dec 2020. Right, the same crop 15th January 2021, after the lambs had been removed.

Figure 3: Left, photo of the Pyle's 45ha Pallaton Raphno crop on the 7th Dec 2020. Right, the same crop 15th January 2021, after lambs the lambs had been removed.

Table 1: Summary of the rainfall since August 3, 2020 at a nearby GoannaAg digital rain gauge located at the Drawbin and Pfeiffer road T-junction.

Period	Rainfall (mm)
August 3 to September 2	129.8
September 2 to December 1	149.6
December 1 to January 3	9.4
Total rainfall	**287.8**

Table 2. Key nutritional value analysis of forages (full analysis published in trials review booklet)

NV Analysis	Ryegrass regrowth	Pallaton Raphno
Dry Matter (DM %)	30.3	13.9
Moisture (%)	69.7	86.1
Crude Protein (% of DM)	7.9	16.4
Digestibility (DMD) (% of DM)	51.2	88.3
Est. Metabolisable Energy (MJ/kg DM)	7.2	13.6

Lambs were removed on January 4 when the ryegrass regrowth ran out however the Raphno paddock still had excess biomass, which indicated it could have supported a higher stocking rate than 31 lambs per hectare. Once weighed, lambs were found to have averaged 109.4g/hd/day on ryegrass and 171.9g/hd/day on Raphno. This resulted in an extra 62.5g/hd/day produced on the Raphno. Once the stocking rate had been accounted for it revealed an extra lamb weight gain of 4kg/ha/day on the Raphno compared to the ryegrass.

For a more in-depth analysis and results from our other MLA PDS sites look out for our Trials Review Booklet coming soon.

Table 3. The Average lamb weights recorded on the 3rd Dec and the 4th Jan, and their average gain across the 30 days.

Forage	Weigh In (Avg kg)	Weigh Out (Avg kg)	Weight gain (Avg kg)	Avg weight gain (g/hd/day)	Weight gain (kg/ha/day)
Ryegrass	49	52.5	3.5	109.38	1.31
Raphno	42.5	48	5.5	171.88	5.35

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